

FOREST EXCISE TAX -- ROAD SUMMARY SHEET

Region: Olympic
Timber Sale Name: Monroe Capitol
Agreement Number: 30-072767

Excise Tax Applicable Activities

Construction: 1033 linear feet
Road to be constructed (optional and required) but not abandoned
Reconstruction: 200 linear feet
Road to be reconstructed (optional and required) but not abandoned
Abandonment: 0 linear feet
Abandonment of existing roads not reconstructed under the contract
Deactivation: 682 linear feet
Road to be made undriveable but not officially abandoned.
Pre-Haul Maintenance: 18216 linear feet
Existing road to receive maintenance work (specifically required by the contract) prior to haul

Excise Tax Exempt Activities

Temporary Optional Construction: 1327 linear feet
Optional roads to be constructed and then abandoned
Temporary Optional Reconstruction: 0 linear feet
Optional roads to be reconstructed and then abandoned
New Abandonment: 0 linear feet
Abandonment of roads constructed or reconstructed under the contract

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contract. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.

(Revised 7/04)

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

ROAD PLAN

SALE NAME: Monroe Capitol

ROAD PLAN DATE: August 25, 2004

SCOPE OF PROJECT

This project includes, but is not limited to new construction including: clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, landing construction, acquisition and installation of drainage structures, and hauling and application of rock. Road Abandonment.

This project also includes, but is not limited to reconstruction including:

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-F-1000	MP 2.06	Install culvert as per culvert list
	MP 2.29	Install culvert as per culvert list
	MP 2.3	Install culvert as per culvert list

This project also includes, but is not limited to pre-haul maintenance including:

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-F-1000	MP 0-MP 2.5	Brush the road right of way as shown on the brushing detail, clean ditch lines and culvert headwalls, remove berms to permit escape of runoff water, install culverts as per culvert list, construct turnouts as shown on the plan view, apply rock as per rock list, grade and shape the road way. Culverts which are removed for replacement, shall be removed from State land.
LS 6+82	0+00-6+82	Brush the road right of way as shown on the brushing detail, clean ditchlines and culvert headwalls, apply rock as per rock list, grade and shape the road way.
PA-F-1200	MP 0- MP 0.75	Clean ditchlines and install one culvert. Underground utilities are present.
PA-F-1100	0+00-6+25	Brush road right of way as shown on the brushing detail, clean ditchlines, fill in water bars, install one culvert, grade and shape the road way.

This project also includes, but is not limited to post-haul maintenance including:

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-F-1200	MP 0-MP 0.75	Apply a 4" lift of 5/8" minus crushed rock. Rock shall be shaped and compacted with a vibratory roller as directed by the Contract Administrator.

SECTION 1 - GENERAL CLAUSES

1.1-1

Clauses in this plan apply to all construction or reconstruction or pre-haul maintenance including landings unless otherwise noted.

1.1-2

Construction or reconstruction or pre-haul or post-haul maintenance of the following roads is required. All roads shall be constructed on the State's location and in accordance with the Road Plan.

<u>Road</u>	<u>Length</u>	<u>Type</u>
PA-F-1000	2.5 miles	Pre-haul maintenance
PA-F-1000	1.5 stations	Reconstruction
LS 6+82	6.82 stations	Pre-haul maintenance
PA-F-1200	0.75 miles	Pre-haul/Post-haul maintenance
PA-F-1100	6.25 stations	Pre-haul maintenance

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1.1-3

Construction or reconstruction or pre-haul maintenance of the following road/s is not required. **If the Purchaser elects to use any of these roads, they shall be constructed or reconstructed on the State's location and in accordance with this Road Plan.**

<u>Road</u>	<u>Length</u>	<u>Type</u>
LS 5+28	5.28 stations	Construction
LS 2+64	2.64 stations	Construction
LS 5+35	5.35 stations	Construction
LS 6+68	6.68 stations	Construction
LS 2+06	2.06 stations	Construction
LS 1+59	1.59 stations	Construction

1.1-4

Any departure from this Road Plan including relocation, extension, change in design or additional roads shall be submitted, in writing, to the Contract Administrator for consideration. Submitted plans must be approved before construction begins.

1.1-5

On this plan quantities are minimum acceptable values. Additional quantities required by the State because of hidden conditions or Purchaser's choice of construction season or techniques shall be at the Purchaser's expense. Hidden conditions include, but are not limited to, solid subsurface rock, subsurface springs or saturated ground, and unstable soil.

1.2-1

Construction and/or reconstruction shall not be permitted from November 1 to April 1 unless authority to do so is granted, in writing, by the Contract Administrator.

1.2.1-1

Pioneering shall not extend past construction that will be completed during the current construction season. Drainage shall be provided on all uncompleted construction as approved, in writing, by the Contract Administrator.

Clearing and grubbing shall be completed prior to starting excavation and embankment.

Culvert placement in live streams shall precede embankment where culverts are to be placed along natural ground. Temporary diversion culverts shall be provided when designed culverts are elevated above natural ground within embankments.

Culverts shall be installed in completed subgrade as construction progresses.

Culverts shall be installed with a backhoe or an excavator.

Subgrade, ditches and culvert installation shall be completed and are subject to written approval by the Contract Administrator prior to rock application.

1.2-2

Purchaser shall not use roads constructed or reconstructed or pre-haul maintained under this Road Plan for hauling, other than timber cut on the right of way, without written approval from the Contract Administrator.

1.2-3

All roads shall be constructed using track mounted hydraulic excavators unless otherwise authorized, in writing, by the Contract Administrator.

1.3-1

Rock hauling shall not be permitted from November 1 to April 1 unless authorized, in writing, by the Contract Administrator.

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SECTION 2 - CLEARING

2.1-3

Right-of-way timber shall not be decked within the grubbing limits or in locations that interfere with the construction of the road prism, as defined by the Contract Administrator. Right-of-way timber shall not be decked in locations that impede drainage.

SECTION 4 - DEBRIS DISPOSAL AND REMOVAL

4.1-1

Right-of-way debris is defined as all vegetative material larger than one cubic foot in volume, within the clearing limits.

4.1-2

All right-of-way debris disposal shall be completed prior to application of rock.

4.2.3-3

Right-of-way debris shall not be placed against standing timber.

4.2.3-4

Right of way debris shall be scattered outside the grubbing limits.

SECTION 5 - EXCAVATION

5.1-1

Unless controlled by construction stakes or specific design sheets herein, roads shall be constructed in accordance with dimensions shown on the Typical Section Sheet.

5.1-3

The construction of road grade and alignment shall conform to the State's marked location. The reconstruction of existing road grades shall conform to the original location except as directed by the contract administrator. Grade and alignment shall have smooth continuity, without abrupt changes in direction.

Construction limitations are as follows:

<u>Favorable Grade</u>	<u>Adverse Grade</u>	<u>Minimum Curve Radius</u>
18%	12%	60 feet

5.1-4

Extra widening on the inside of curves shall be:

2 feet extra --- 80 to 100 foot radius curves
4 feet extra --- 60 to 80 foot radius curves

5.1-5

Curve widening where required, shall be added to the inside of curves.

5.1-8

Excavation slopes shall be constructed no steeper than shown on the following table (except as construction staked or designed):

<u>Material Type</u>	<u>Excavation Slope Ratio</u>
Common Earth (on side slopes to 55%).....	1:1
Common Earth (55% to 70% sideslopes).....	3/4:1
Common Earth (on slopes over 70%).....	1/2:1
Fractured or loose rock	1/2:1
Hardpan or solid rock	1/4:1

5.1-9

Excavation and embankment slopes shall be constructed to a uniform line and left rough for easier revegetation.

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5.1-10

Embankments shall be widened as follows:

<u>Height at Shoulder</u>	<u>Subgrade Widening</u>
Less than 6 feet	2 feet
6 feet or over	4 feet

5.1-11

Embankment slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Embankment slope ratio</u>
Common earth and rounded gravel.....	1-1/2:1
Angular rock	1-1/4:1
Sandy Soils	2:1

5.1-12

Organic material shall be excluded from embankment shown on Typical Section Sheet and from waste material deposited on slopes in excess of 40 percent.

5.1-15

Excavated material may be deposited adjacent to the road prism on side slopes up to 45 percent if the material is compacted and more than 50 feet away from live streams.

5.1-23

Turnout locations noted on this plan are approximate. Location shall be adjusted to fit final subgrade alignment and sight distances.

5.1-24

Turnouts shall be intervisible with a maximum of 1,000 feet between turnouts unless shown otherwise on drawings.

5.2-1

Pioneering operations shall not undercut the final cut slope, deposit excavated material outside the right-of-way limits or restrict drainage.

5.3-1

All embankment and waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts. Side hill embankments too narrow to accommodate excavation equipment may be placed by end-dumping or side casting until sufficiently wide to support the equipment.

5.4-1

Silt-bearing runoff, as defined by the Contract Administrator, shall not be permitted to go into streams.

5.4-2

Accomplish sediment removal through silt traps, silt fences, settling ponds or other methods to be approved, in writing, by the Contract Administrator.

5.5-5

Finished subgrade shall be crowned as shown on the Typical Section Sheet. Grade and compact to a uniform, firm, rut-free surface to ensure surface runoff in an even unconcentrated manner.

SECTION 6 - DRAINAGE

6.2.1-1

Purchaser shall furnish, install and maintain corrugated polyethylene and/or aluminized steel Type 2 (ASTM A929, A760, A796, AASHTO M274, M36) pipe as designated on Culvert List. Culvert and flume lengths shall be varied to fit as built conditions subject to written approval by the Contract Administrator.

Note: Temporary culverts may be galvanized steel.

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6.2.1-1A

Corrugated polyethylene pipe shall have a corrugated exterior and smooth interior, shall meet ASTM F405, F667 and AASHTO M252, M294 Standard Specifications, and shall be manufactured with high density polyethylene resins.

6.2.1-2

Manufacturer's approved connectors shall be used for corrugated polyethylene pipe. Annular corrugated bands and culverts ends shall be used on aluminized steel pipe.

6.2.2.1-1

Culvert, downspout, flume and energy dissipater installation shall be in accordance with Culvert and Drainage Specification Detail.

6.2.2.2-1

Any damaged aluminized coating or cut ends shall be retreated with a minimum of 2 coats of zinc rich paint.

6.2.2.3-1

Cross drains and surface culverts on road grades in excess of 3% shall be skewed at least 30 degrees from perpendicular to the road centerline.

6.2.2.3-2

Cross drain culverts shall be installed at a slope steeper than the incoming ditch grade, but not less than 3 percent nor more than 10 percent. Polyethylene culverts shall not be installed at a grade of over 3%.

6.2.2.4-1

Installation of culverts 36 inches in diameter and over shall be approved in writing by the Contract Administrator prior to making backfill.

6.2.2.5-1

Drainage structure outfalls shall not terminate directly on unprotected soil that will erode. Downspouts, flumes and energy dissipaters shall be installed to prevent erosion.

6.3-1

Ditches shall be constructed prior to application of rock. Ditches shall drain to culverts, ditchouts and natural drainages.

6.3-2

Shaping the ditchline, culvert headwalls and catchbasins shall be completed prior to application of rock and shall be done in accordance with the Typical Section Sheet and Drainage Specification Detail.

6.4-1

Catch basins shall be constructed to resist erosion. Minimum dimensions: two feet wide and four feet long with backslopes consistent with Clause 5.1-8: Excavation Slopes.

6.5-1

Head walls shall be constructed in accordance with Culvert and Drainage Specification Detail at all cross-drain culverts.

6.5-2

Embankment slopes adjacent to culvert inlets and outlets shall be armored for a distance of two culvert diameters on each side of the pipe and one culvert diameter above the pipe in accordance with Culvert List.

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SECTION 7 - ROCK

7.1-2

Rock used under this contract may be obtained from the following pit/s on private land. Provisions for the purchase are outlined in the letter/s referenced below:

<u>Source # / Name</u>	<u>Pit Owner</u>	<u>Letter Dated</u>	<u>Rock Type</u>
A/ Morse Creek	Clallam County	July 29, 1997	Pitrun

Purchaser shall contact Clallam County Department of Public Works prior to any rock removals to arrange for access to the pit.

7.1-2.1

A total of 3,000 cubic yards of rock shall be removed from Morse Creek Pit. Excess rock not used under this contract shall be stockpiled: Stock pile sites are the wide area approximately MP 0.25 on the PA-F-1000 road or in the MT. Pleasant Pit.

7.1-3

Crushed 1 ½ " minus source B and 5/8" minus source C for construction and/or reconstruction and/or pre-haul/post-haul maintenance under this contract may be obtained from commercial sources. Rock sources will be subject to written approval by the Contract Administrator prior to their use.

7.2.1-1

Rock shall meet the following specifications for gradation when placed on the subgrade. No more than 10% of the rock shall be larger than 8 inches in any dimension and no rock shall be larger than 12 inches in any dimension.

7.4.2-1

Apply at least the minimum required rock quantity as shown on the Rock List.

7.4.2-2

Subgrade shall be approved, in writing, by the Contract Administrator prior to application of rock.

7.4.2-7

Turnouts and curve widening shall have rock applied to the same depth and specifications as the traveled way.

7.4.2-8

Each lift of rock shall be shaped as shown on the Rock List and shall be uniform, firm, rut-free and shaped to ensure surface runoff in an even unconcentrated manner.

7.4.3-2

On the F-1200 post-haul maintenance rock shall be spread and compacted full width in lifts not to exceed 6 inches uncompacted depth. Compaction shall be by smooth drum vibratory roller weighing at least 12,000 pounds. Three complete passes at a maximum speed of 3 m.p.h. shall be made on each lift.

7.4.3-3

Rock shall be spread, shaped and compacted concurrently with rock hauling operations.

SECTION 9 – ABANDONMENT

9.1-1

The LS 2+64, LS 5+28 and LS 5+35 roads shall be abandoned by the purchaser following completion of timber harvest. Abandonment shall consist of removing culverts, removed culverts shall be the property of the Purchaser and removed from State land, ripping the road surface and subgrade to a depth of two feet below the road surface, placing embankment waste and logging debris on the road bed and constructing water bars and blocking the road to vehicular traffic by constructing "tank traps" as directed by the Contract Administrator.

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The diagram illustrates the construction, reconstruction, and pre-haul maintenance classes for a road section. It includes a cross-section view and a turnout detail plan view.

CONSTRUCTION CLASS

- NEW CONSTRUCTION - C
- RECONSTRUCTION - R
- PRE-HAUL MAINTENANCE - P

SECTION VIEW

The cross-section view shows the road profile with various dimensions and labels:

- G1**: Distance from the left edge to the start of the main road section.
- C1**: Distance from the left edge to the start of the main road section.
- D**: Depth of the ditch on the left side.
- W**: Width of the ditch on the left side.
- R**: Radius of the curve on the right side.
- S**: Length of the main road section.
- G2**: Distance from the end of the main road section to the right edge.
- C2**: Distance from the end of the main road section to the right edge.

TURNOUT DETAIL (PLAN VIEW)

The turnout detail plan view shows the width of the turnout with three 50-foot segments:

- 50'
- 50'
- 50'

The plan view also shows the radius **R** and the centerline of the road.

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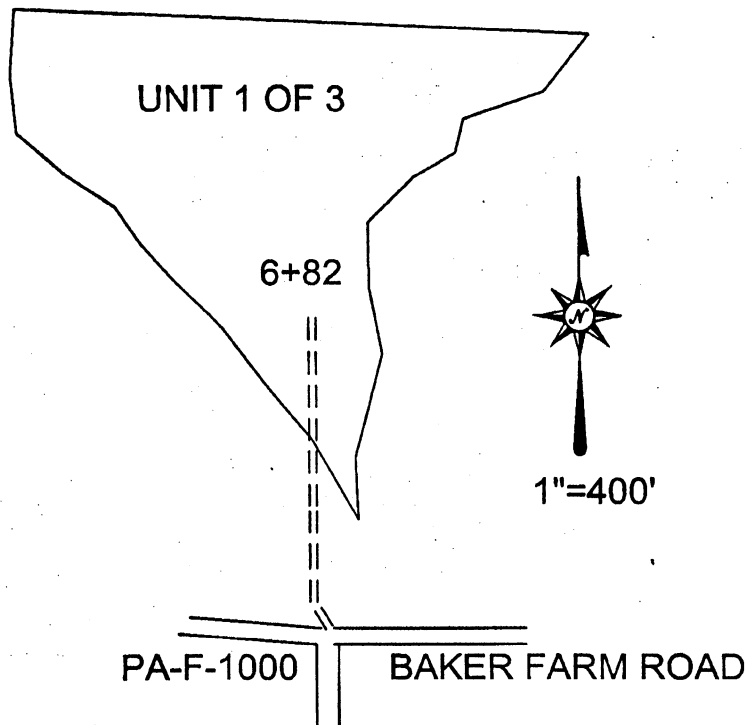
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PLAN VIEW



PREHAUL MAINTENANCE =====

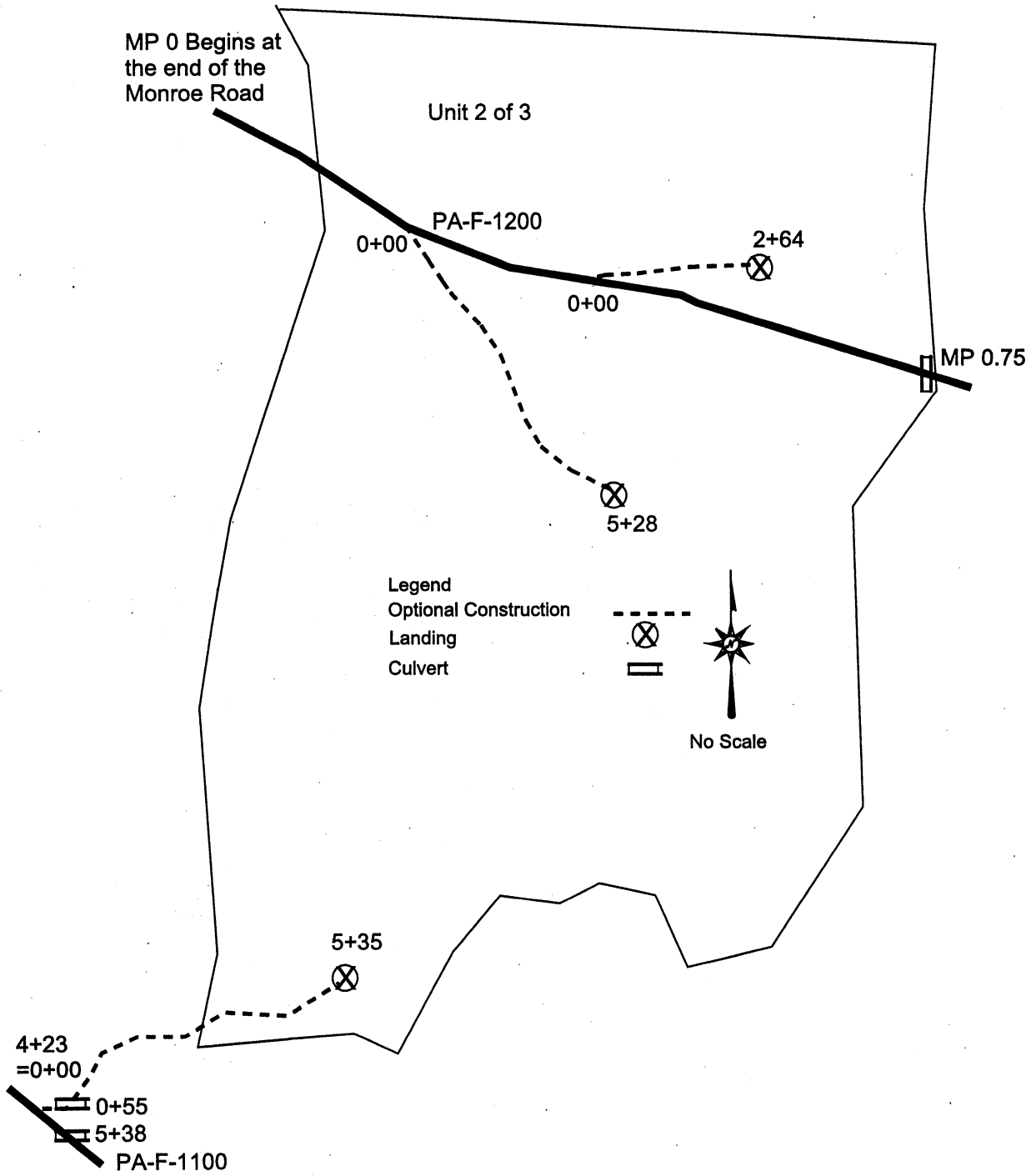
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PLAN VIEW



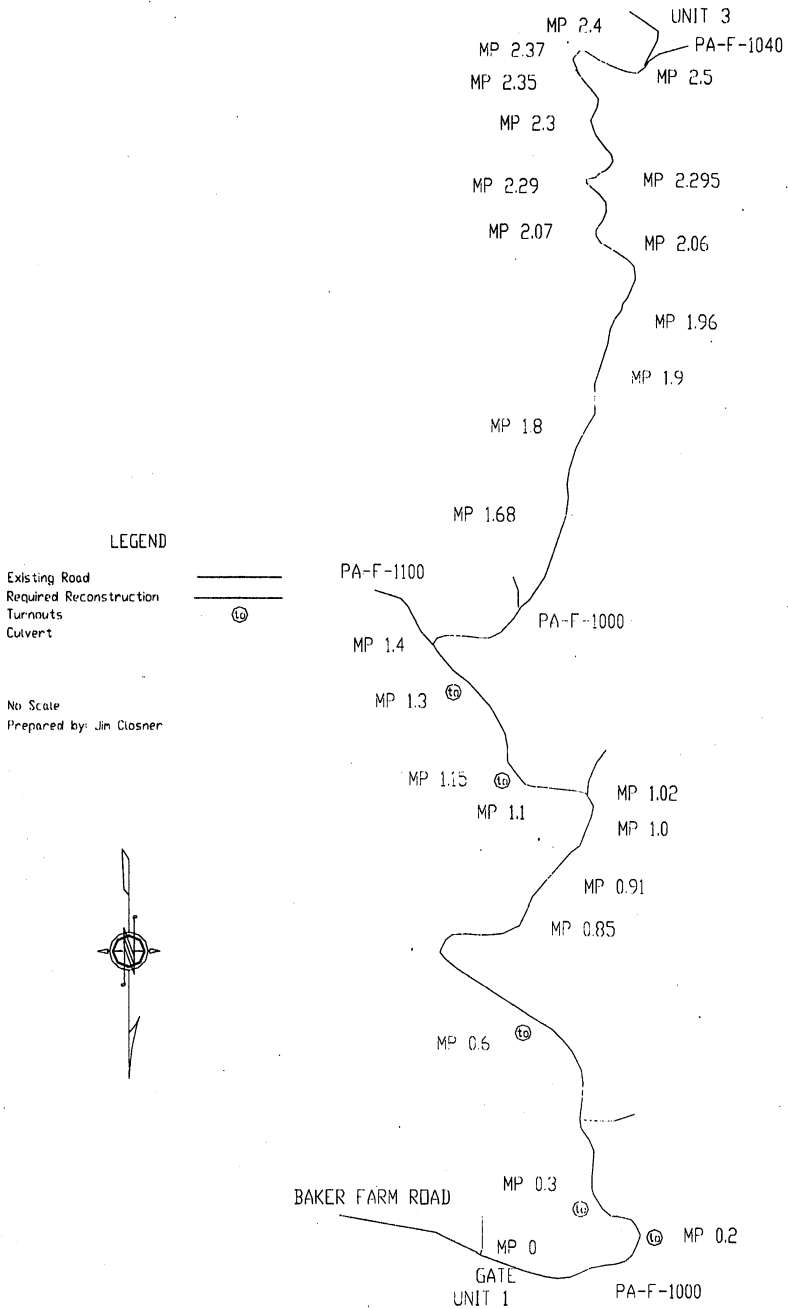
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PLAN VIEW



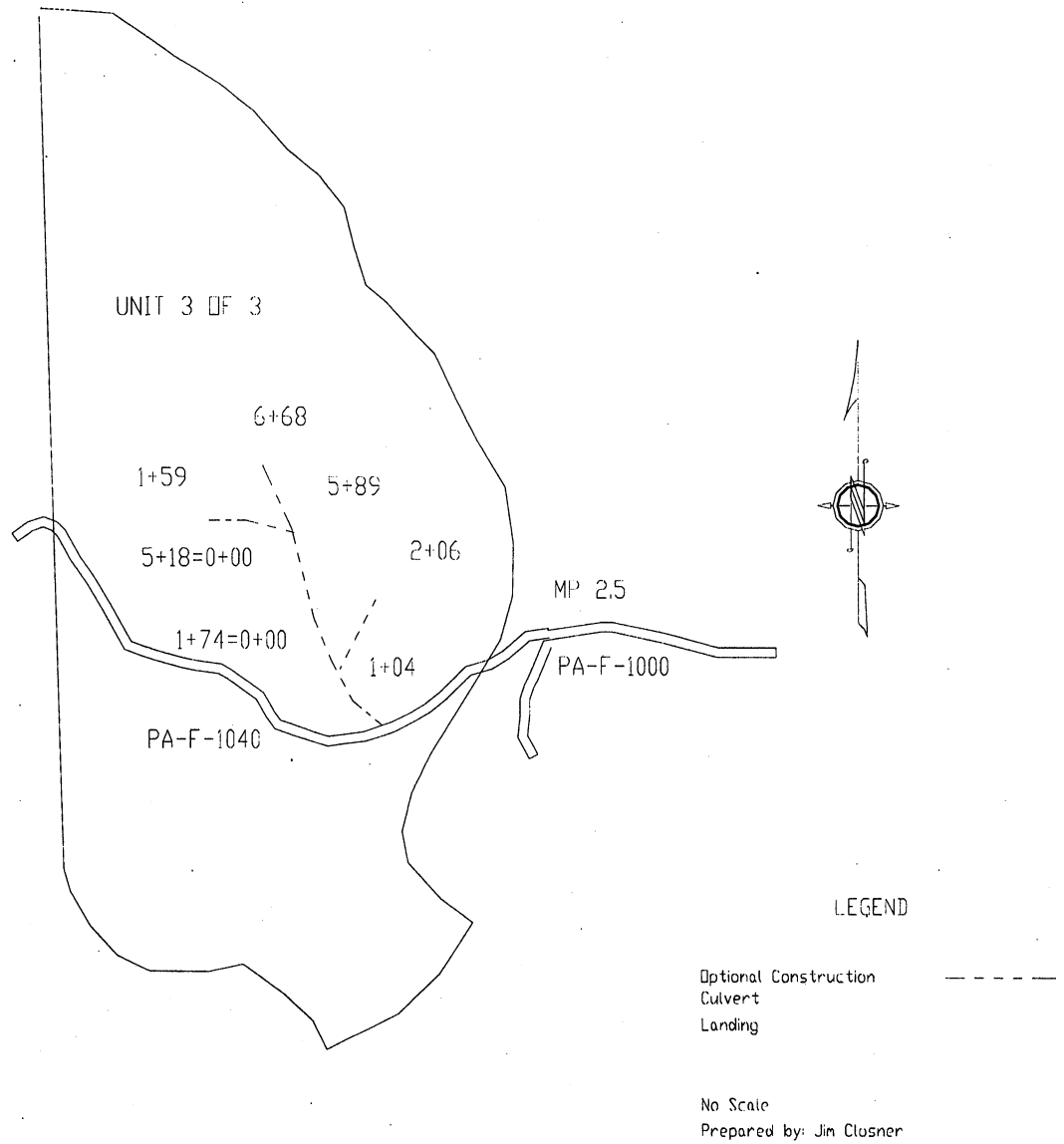
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PLAN VIEW



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A cross-sectional diagram of a road structure. It shows three distinct layers: a bottom layer labeled 'SUBGRADE' with a brick-like pattern, a middle layer labeled 'BALLAST' with a dotted pattern, and a top layer labeled 'SURFACING' with a horizontal line pattern. Three horizontal dimension lines are shown above the layers: the widest one spans the entire subgrade and is labeled 'SUBGRADE WIDTH'; the middle one spans the ballast layer and is labeled 'BALLAST WIDTH'; and the narrowest one spans the surfacing layer and is labeled 'SURFACING WIDTH'. A vertical centerline is indicated by a dashed line and labeled 'C' at the bottom.

1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed. All depths are compacted depths.
2. Rock slopes shall be 1½ (H) : 1 (V).
3. All rock sources are subject to approval by the Contract Administrator.
4. Rock source A= Morse Creek
Rock source B & C= Commercial sources B=1 1/2 " minus, source C=5/8" minus crushed

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CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	DOWNSPOUT LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-F-1000	MP 0.85	18"	32'					CR	
	MP 0.91	18"	34'					CR	
	MP 1.0	18"	34'					CR	
	MP 1.1	18"	32'					CR	
	MP 1.68	18"	24'					CR	
	MP 1.8	18"	32'	10'				CR	
	MP 1.9	18"	28'	20'				CR	
	MP 1.96	24"	30'					CR	
	MP 2.06	42"	36'	10'				CR	
	MP 2.07	24"	34'	10'				CR	
	MP 2.29	42"	44'	10'				CR	
	MP 2.295	18"	32'					CR	
	MP 2.3	42"	50'	10'				CR	
	MP 2.35	18"	32'	40'				CR	
	MP 2.37	42"	0	20'					Extend Flume Only
	MP 2.4	18"	32'	20'				CR	
LS 6+68	1+04	18"	30'					NT	
	5+89	18"	30'					NT	
LS 2+06	0+10	18"	30'					NT	
PA-F-1100	5+88	18"	34'					CR	
LS 5+35	0+55	18"	30'					NT	Temporary
PA-F-1200	MP 0.75	18"	30'	10'				CR	

Backfill NT – Native Material (bank run), CR – 1 1/2” Crushed Rock

Required Minimum Gauge for Metal Pipe

Diameter	Gauge
18"	16
24" - 42"	14
48" - 54"	12
60" - 96"	10

ROAD PLAN

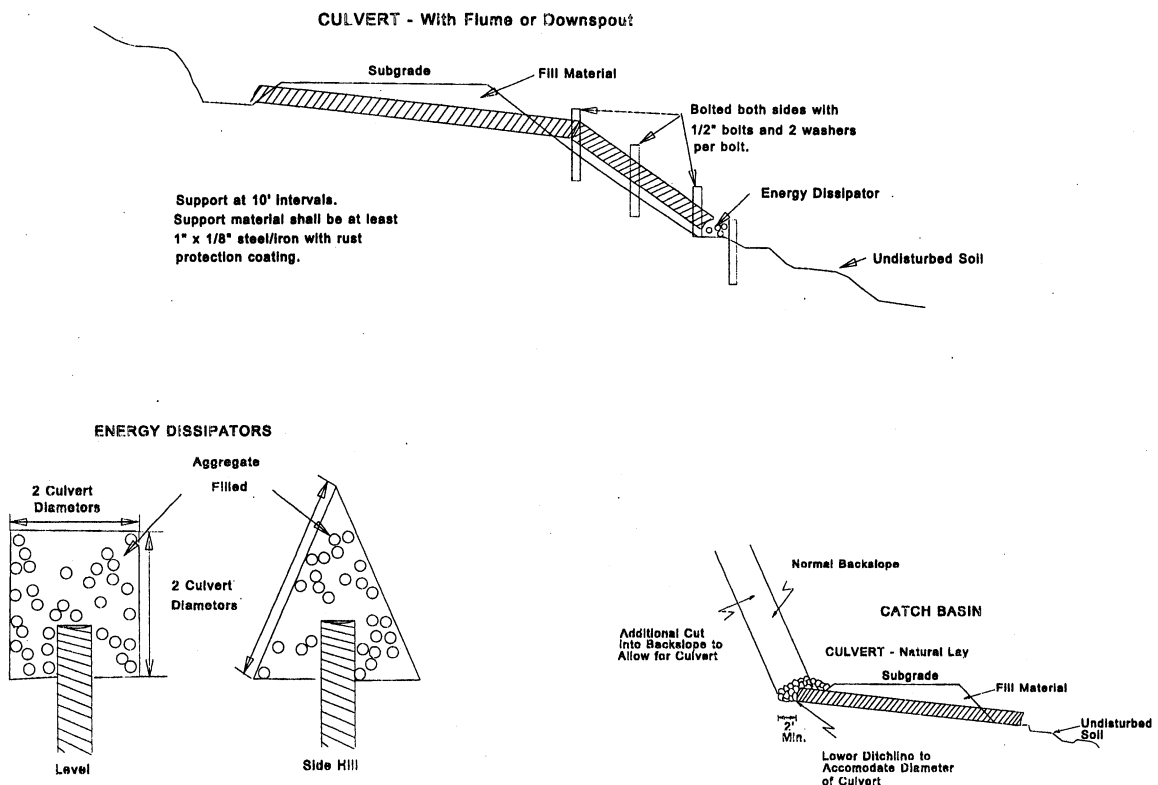
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CULVERT AND DRAINAGE SPECIFICATION DETAIL

INSTALLATION REQUIREMENTS:

1. Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense unyielding base. The backfill material shall be placed so that the pipe is uniformly supported along the barrel.
2. All bedding material of poor or non-uniform bearing capacity shall be removed and replaced with suitable fill. Crushed stone, gravel or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed $1/6$ pipe diameter or 4", whichever is smaller. All material shall be compacted in six inch layers under the haunches, around the sides and above the pipe to the minimum height of cover.
3. Crushed stone and gravel backfill materials shall be compacted to a level of 90-95% AASHTO standard density. When native soils are used as backfill material, a compaction level of 85% is required. This minimum compaction can be achieved by either hand or mechanical tamping.



DISSIPATOR SPECIFICATIONS:

Depth: 1 culvert diameter
Aggregate: 6" plus

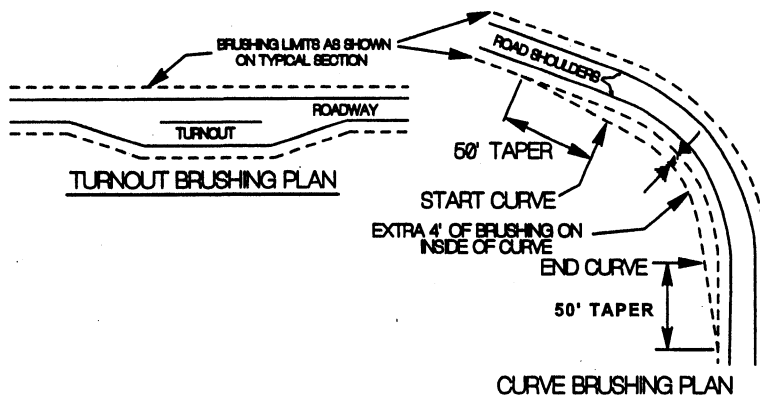
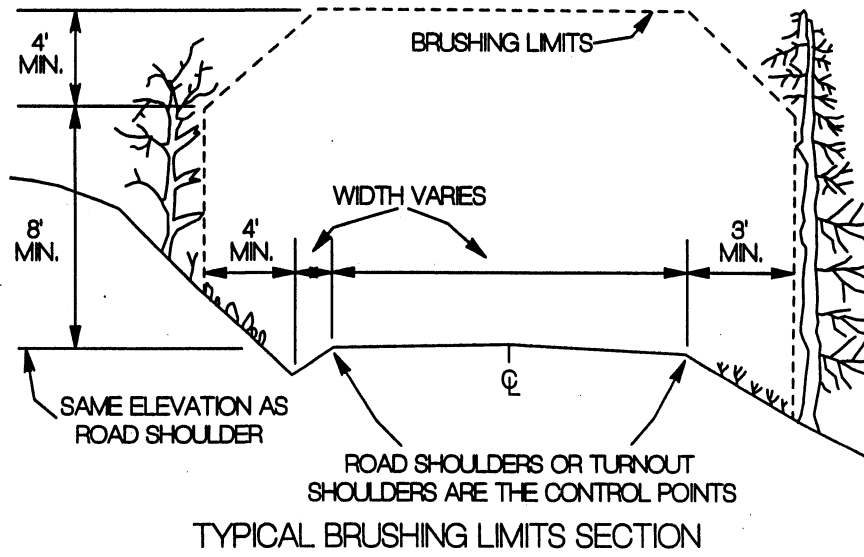
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BRUSHING DETAIL



- 1) ALL VEGETATION WITHIN THE BRUSHING LIMITS SHALL BE CUT TO WITHIN 8" OF THE GROUND, UNLESS OTHERWISE DIRECTED BY THE CONTRACT ADMINISTRATOR.
- 2) ALL BRUSH, TREES, LIMBS, ETC. SHALL BE REMOVED FROM THE ROAD SURFACE.
- 3) ALL BRUSH, TREES, LIMBS, ETC. THAT MAY RESTRICT THE FLOW OF WATER SHALL BE REMOVED FROM THE DITCH LINE.
- 4) ALL DEBRIS THAT MAY ROLL OR MIGRATE INTO THE DITCH LINE SHALL BE REMOVED.